



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

648.4709

Job Sheet 172734



Part No: 648.4709

Job Qty: 1 ea

Part Name: SWA10A Overhaul



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 2/21/18

Job Tracking No:

Due Date: 4/27/18

Created By: Marie Lajeunesse

Type: SOLD

Description:

Note: DWG OM_OOPM-SWA10A Rev 3 (648.4709) IPP Rev A 18.01.25 New issue DP Verify DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea		4/27/18	0.00	0.00	Start Up Small Fab-4		MIC
110	Small Fab	1 pcs		4/27/18	0.00	0.00	Small Fab-4		NCC DAS
120	QC	1 pcs		4/27/18	0.00	0.00	QC5		38
121	DC	1 pcs		4/27/18	0.00	0.00	DC		3-88
130	Packaging	1 pcs		4/27/18	0.00	0.00	Packaging3-1	FL102 JAS	APR 24 2018
140	QC21-FG	1 Ea		4/27/18	0.00	0.00	QC21	J-88	APR 24 2018

Part Op 110 - Pick bag and tag.

Descriptions: 121 - Supply owner's & overhaul procedures manual

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
188-FPSS-1032-1/2	Set Screw	1 Ea (1 ea)	90-Start up Operation	5037670
188-FPSS-1032-3/8	Set Screw	1 Ea (1 ea)	90-Start up Operation	5037669
188-FPSS-1032-5/8	Set Screw	1 Ea (1 ea)	90-Start up Operation	5037088
188-FSCS-1032-5/8	Wire Clamp Screw	4 Ea (4 ea)	90-Start up Operation	5031042
600.1319	Up Decal	1 Ea (1 ea)	90-Start up Operation	5036704
EL314-SJTOW	3 Wire	6 ft (6 ea)	90-Start up Operation	5029542
SWA10A-1100	Upper DU Bearing	1 Ea (1 ea)	90-Start up Operation	5036190
SWA10A-1200	Lower DU Bearing	1 Ea (1 ea)	90-Start up Operation	5036727
SWA10A-1300	Roller Thrust Bearing	1 Ea (1 ea)	90-Start up Operation	5036191
SWA10A-1400	Circlip	1 Ea (1 ea)	90-Start up Operation	5049918
SWA10A-400	Thrust Washer	1 Ea (1 ea)	90-Start up Operation	5027243
SWA6A-1900	Female Spade Terminal - 1/4"	12 Ea (12 ea)	90-Start up Operation	5026410
SWA6A-2000	1/8" Female Spade Connector	4 Ea (4 ea)	90-Start up Operation	

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	188-FPSS-1032-1/2	1	100	0
	188-FPSS-1032-3/8	1	100	0
	188-FPSS-1032-5/8	1	199	0
	188-FSCS-1032-5/8	4	184	0
	600.1319	1	250	0
	EL314-SJTOW	6	247	0
	SWA10A-1100	1	6	0

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoform ☐ Large ☐ Cross tube ☐ Small Fahl ☐ Water Jet ☐ Prod Eng Contr ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____		Step #: _____		QTY _____		2) Approval	
Description Work Order Deviation							
Root Cause							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature ☐	Date: 04/19/18 Inspector: _____ Revision: 3 Serial No/Batch: S062714 Part: 648.4709 Job No: 172734 Container No: S062714 DART AEROSPACE 1270 Aberdeen Street Hawkesbury, ON K6A 1K7 CANADA TEL: 1 613 632-5200 Email: sales@dartaero.com www.dartaerospace.com			
Design ☐	Operator ☐	Bending ☐	Set-up ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damaged ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection In ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contaminant ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions I ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : ☐					
Misidentified ☐	Past Due ☐						

ated By

Supervisor
VerificationCoordinator
Approvald Wrong
Dimensions
Per tolerance
Correct
Missing
ed

Sequence

SWA10A-1200	1	10	0
SWA10A-1300	1	10	0
SWA10A-1400	1	10	0
SWA10A-400	1	0	0
SWA6A-1900	12	88	0
SWA6A-2000	4	100	0

Part Specifications

Specifications could not be found.

Plex 2/21/18 2:20 PM Dart.lajeunesse.marie

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

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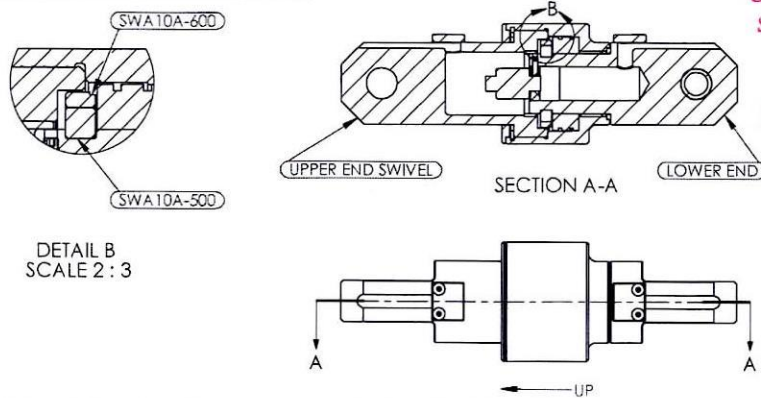
WITHOUT NOTICE

WORK ORDER

NO. 172734 MW

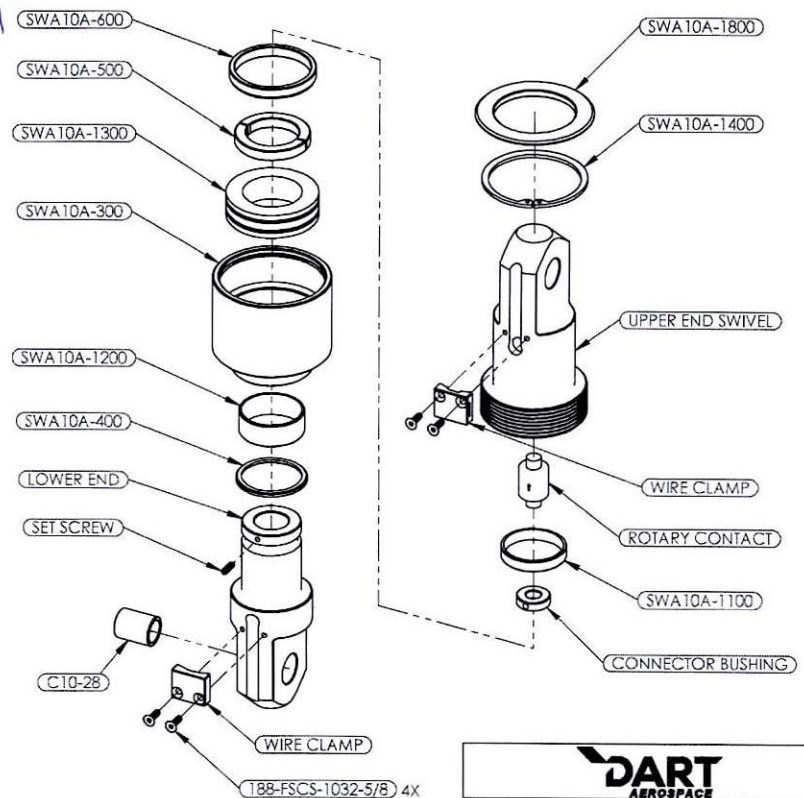
18-02-21

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REV		DESCRIPTION		DATE	INITIAL	APPROVED
1	A	REPLACED ID DECAL 600 1318 WITH LASER ETCH		11/16/2012	JAG	
2	15-0146	UPDATED TO NEW DRAFTING STANDARDS. ADDED ENGRAVE NOTES AND DETAILS. SWAAA-1900 CHD QTY 5; ASSY-4 WAS 8 IS 4; ASSY-6 WAS 12 IS 8; ASSY-8 WAS 16 IS 12. SWAAA-2000 ADDED P/N: ASSY-4 QTY 4; ASSY-6 QTY 4; ASSY-8 QTY 4; 188-FPS-1032-5/8 ADDED P/N: ASSY-8 QTY 1; 188-FPS-1032-1/2 ADDED P/N: ASSY-6 QTY 1; 188-FPS-1032-5/8 CHD QTY 5; ASSY-8 WAS 16 IS 12. ASSY-8 WAS 16 IS 12. EL14-ARTIC, EL16-ARTIC, EL18-ARTIC CHD QTY 5 WAS 8 IS 12. ADDED 6FT TO B/O INFO. ADDED REBUILD ONLY NOTE		6/16/2015	DPD	JAG
3	17-0090	ADDED NOTE 3, SHEET 1. CHD P/N WAS EL16-ARTIC (TRUCK & AUTO SUPPLY) B #92806 (POLAR WIRE). ADDED P/N C10-28		5/31/2017	RJC	JAG

-2/ QTY.	-3/ QTY.	-4/ QTY.	-5/ QTY.	-6/ QTY.	B/O	Part #	Description	Material	B/O INFORMATION OR SPECIFICATIONS
1	1	1	-	-		SWA10A-100	LOWER END	SS 17-4 H1150/H1075	
-	-	-	1	1		SWA10A-110	LOWER END	SS 17-4 H1150/H1075	
1	1	1	-	-		SWA10A-200	UPPER END SWIVEL	SS 17-4 H1150/H1075	
-	-	-	1	1		SWA10A-210	UPPER END SWIVEL	SS 17-4 H1150/H1075	
1	1	1	1	1		SWA10A-300	BEARING HOUSING	SS 17-4 H1150/H1075	
1	1	1	1	1		SWA10A-400	THRUST WASHER	AL-BRONZE #30	
1	1	1	1	1		SWA10A-500	SEMI-RINGS	SS 17-4 H1150/H1075	
1	1	1	1	1		SWA10A-600	COLLAR	SS 17-4 H1150/H1075	
2	2	-	-	-		SWA10A-700	WIRE CLAMP	5051-T6	
-	-	2	2	2		SWA10A-700A	WIRE CLAMP	5051-T6	
1	-	-	-	-		SWA6A-800A	CONNECTOR BUSHING		
-	1	1	-	-		SWA6A-800B	CONNECTOR BUSHING		
-	-	-	1	-		SWA6A-800C	CONNECTOR BUSHING		
1	-	-	-	-	B/O	SWA6A-900A	ROTARY CONTACT	MERCOTAC #230	
-	1	-	-	-	B/O	SWA6A-900B	ROTARY CONTACT	MERCOTAC #230	
-	-	1	-	-	B/O	SWA6A-900C	ROTARY CONTACT	MERCOTAC #430	
-	-	-	1	-	B/O	SWA6A-900D	ROTARY CONTACT	MERCOTAC #630	
-	-	-	-	1	B/O	SWA6A-900E	ROTARY CONTACT	MERCOTAC #830	
1	1	1	1	1		SWA10A-1100	UPPER DU BEARING	BRONZE/OLITE TUBING	
1	1	1	1	1	B/O	SWA10A-1200	LOWER DU BEARING	(KAMAN MB5020DU)	
1	1	1	1	1		SWA10A-1300	ROLLER THRUST BEARING	(KAMAN B1210TN)	
1	1	1	1	1	B/O	SWA10A-1400	CIRCLIP	(KAMAN NS000 350 SPP)	
1	1	1	1	1		SWA10A-1800	COVER	SS 17-4 H1150/H1075	
4	6	4	6	12	B/O	SWA6A-1900	1/4 FEMALE SPADE CONNECTOR	(MCMMASTER-CARR #6925K16)	
-	-	4	4	4	B/O	SWA6A-2000	1/8 FEMALE SPADE CONNECTOR	(MCMMASTER-CARR #6925K14)	
4	4	4	4	4	B/O	188-FSCS-1032-5/8	FLAT SOCKET CAP SCREW	SS, 10-32 x 5/8 (MCMMASTER-CARR #922104303)	
-	-	-	-	1	B/O	188-FPS-1032-3/8	SET SCREW	SS, 10-32 x 3/8 (MCMMASTER-CARR #94355A335)	
-	-	-	-	1	B/O	188-FPS-1032-1/2	SET SCREW	SS, 10-32 x 1/2 (MCMMASTER-CARR #94355A337)	
1	1	1	-	-	B/O	188-FPS-1032-5/8	SET SCREW	SS, 10-32 x 5/8 (MCMMASTER-CARR #92311A430)	
1	1	1	1	1	B/O	EL-PLUG-F	FEMALE PLUG	PE High Density (MCMMASTER-CARR #7216K6)	
1	1	1	1	1	B/O	EL-PLUG-M	MALE PLUG	PE High Density (MCMMASTER-CARR #7216K6)	
1	1	-	-	-	B/O	EL14-ARTIC	3 WIRE	6 FT. (TEXCAN #EL3144J TOW 3/14)	
-	-	1	-	-	B/O	EL16-ARTIC	4 WIRE	6 FT. (TRUCK & AUTO SUPPLY #EL416-ARTIC 4/14)	
-	-	-	1	-	B/O	EL18-ARTIC	6 WIRE	6FT. (TRUCK & AUTO SUPPLY #EL418-ARTIC)	
-	-	-	-	1	B/O	3080s	8 WIRE	6FT. (POLAR WIRE #30806)	
1	1	1	1	1	B/O	600 1318	UP DECAL		
1	1	1	1	1		C10-28	BUSHING	3/4 Ø SHAFT X 1 O.D. C10-174 (MCMMASTER-CARR #6301A193)	



NOTES:

- FOR REBUILD ONLY.
- ALL ASSEMBLY TO BE DONE IN ACCORDANCE WITH SWA SWIVEL MANUAL.
- 8 WIRE STRIP OUTER JACKET & DOUBLE LAYER HEAT SHRINK.

		TITLE	
		SWA10A SWIVEL	
DWG NO.		REV	3
PART		SWA10A	
MATERIAL		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
FINISH		XXX ± .005 FRACTIONS ± 1/8	
SPEC		XX ± .01 ANGLES ± 5° SURFACES ± 125	
DRAWN BY: GILBERT		1. BREAK ALL SHARP EDGES .015 ± .05 OR .0158	
CHECKED: DD 04/18/2017		2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
DPPS APPR: AA 05/05/2017		3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009	
QA APPR: JL 05/10/2017		USED ON MODEL	
APPROVED: JAG 05/02/2017			
SCALE	1:4	DATE	11/14/2012
		SHEET 1 OF 2	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

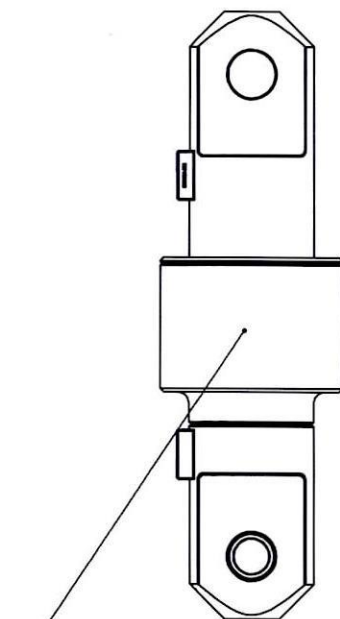
Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																		
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Large Fab ☐	Composite ☐	Supplier ☐																			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval																	
Description Work Order Deviation			Disposition																		
			Completed By																		
			Lead hand / Supervisor Approval Verification																		
			QC / QA Coordinator Approval																		
Root Cause		FAULT CATEGORY																			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐																
OTHER :																					

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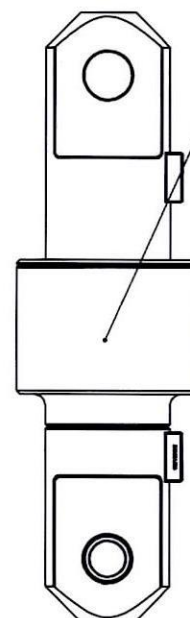
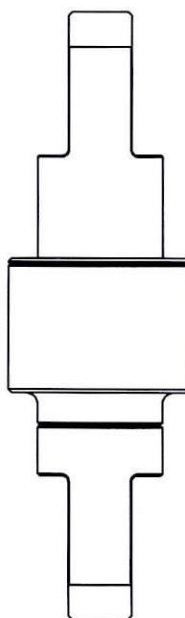
REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED



ENGRAVE P/N, S/N, SWL



LASER ENGRAVE DART LOGO



DART AEROSPACE	
TITLE SWA10A SWIVEL	
DWG NO. SWA10A	REV 3
MAT'L HEAT TREAT FINISH SPEC	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 FRACTIONS ± 1/8 .XX ± .01 ANGLES ± 5° .X ± .1 SURFACES = 125°
DRAWN BY: GILBERT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DD 04/18/2017	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: AA 05/05/2017	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: JL 05/10/2017	USED ON MODEL
APPROVED: JAG 06/02/2017	
SCALE 1:4	DATE 11/14/2012 SHEET 2 OF 2

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



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Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
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Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								